

Appendix D
Developed Area Runoff
BMP Selection Matrix

2014 Connecticut Nonpoint Source Management Plan

BMP Category	BMP Description	Type of BMP	Nature of Structural BMP		Pollutants Addressed						O&M Needs	Cost of Implementation	Applicability				Reference
			Permanent	Temporary	Sediment	Nitrogen	Phosphorus	Bacteria	Metals	Petroleum			Redevelopment	Groundwater Recharge	Small Sites	Requires Pretreatment	
Pretreatment	Vegetated Filter Strips	Structural	X		X						M	\$50 - 100 per linear foot	X				a
Pretreatment	Hydrodynamic Separators- Vortex	Structural	X		X				X	X	M	\$8,000 to \$15,000 per device	X		X		a
Pretreatment	Enhanced Hydrodynamic Separator	Structural	X		X				X	X	M	Varies	X		X		-
Pretreatment	Baffle Box	Structural	X		X						M	\$20,000 to \$30,000 per device	X				a
Pretreatment	Catch basin filter	Structural		X	X					X	L	\$35 to \$100 per device					Multiple
Pretreatment	Compost filter sock	Structural		X	X	X	X	X	X	X	L	\$1 to \$5 per linear foot					Multiple
Pretreatment	Sediment forebay	Structural	X		X						M	\$2 to \$10 per square foot					Multiple
Treatment (with infiltration)	Bioretention cell/ Rain Garden	Structural	X		X	X	X	X	X	X	M	\$5 to \$30 per square foot	X	X		X	a
Treatment (with infiltration)	Planter box	Structural	X		X	X	X	X	X		L	\$24- \$32 per square foot	X		X	X	a
Treatment (with infiltration)	Tree box filter	Structural	X		X	X	X		X	X	L	\$10,000 - \$18,000 per device	X		X		a
Treatment (with infiltration)	Roadway median retrofit	Structural	X		X				X	X	M	Varies	X		X		Multiple
Treatment (with infiltration)	Subsurface engineered infiltration system	Structural	X		X						M	Varies	X	X		X	a
Treatment (with infiltration)	Woodland buffer	Structural	X		X	X	X		X		L	\$108 per acre (\$2.16 to \$2.57 per pound total N removed)					c
Treatment (with infiltration)	Grass buffer	Structural	X		X	X	X		X		L	\$17 per acre (\$0.61 per pound total N removed)					c
Treatment (with infiltration)	Soil Amendments	Structural	X				X				M	\$135,000 - \$400,000 capital plus \$6,500 to \$25,000 per year in O&M	X				d
Treatment (with infiltration)	Constructed wetland	Structural	X		X	X	X		X		M	\$50,000 - \$250,000				X	a
Treatment (with infiltration)	Subsurface gravel wetland	Structural	X		X		X				M	\$4 to \$5 per square foot; \$22,300 per acre of impervious surface treated	X			X	e
Treatment (with infiltration)	Sand or multi-media filter	Structural	X		X	X	X	X	X		M	\$10,000 to \$50,000 per impervious acre	X			X	a
Treatment (with infiltration)	Vegetated roof	Structural	X								H	\$20 to \$30 per square foot	X				a
Treatment (with infiltration)	Private Property Retrofits	Structural	X		Retrofit varies by site - focus on private parcels in high-load areas						Varies	Varies	X		Varies		Multiple
Treatment (with infiltration)	Water Quality Swale	Structural	X		X	X	X		X		L	\$0.50 per square foot; \$10 per linear foot	X	X	X	X	Multiple
Treatment (with infiltration)	Tree planting program	Non-Structural		-	X	X	X				L	\$108 per acre (\$8 to \$11 per pound total N removed)	X				c
Infiltration	Roofline drip edge	Structural	X		X						L	\$5 per cubic foot of stormwater infiltrated; \$13.00 per linear foot		X			Multiple
Infiltration	Permeable pavement	Structural	X		X	X	X	X	X	X	H	\$8 to \$15 per square foot	X	X			a
Infiltration	Roof downspout redirection/disconnection	Structural	X		N/A						L	Varies		X			Multiple
Infiltration	Dry well/ infiltration basin	Structural	X		X	X	X	X	X	X	L	\$500 to \$1,000 each	X	X	X		a, d
Infiltration	Gravel trench	Structural	X		X	X	X	X	X		L	\$50 to \$80 per linear foot	X	X		X	a
Conveyance	Vegetated Conveyance Swale	Structural	X		X	X			X	X	L	\$4.90 to \$50 per linear foot	X			X	a
Runoff Reduction	Residential Rain Barrels	Non-Structural		-	N/A							\$1 to \$4 per gallon	X		X		a
Runoff Reduction	Retention (Wet) Basin	Structural	X		X	X	X					\$2 to \$10 per square foot					Multiple
Runoff Reduction	Minimize new impervious surface	Non-Structural		-	X	X	X					None	X		X		-
Runoff Reduction	Redirect existing impervious surface	Structural	X		X	X	X					Varies	X		X		a
Pollution Prevention	Septic System Inspection Program	Non-Structural		-		X	X	X			-	\$400 to \$1,500 per system	X		X		Multiple
Pollution Prevention	Detergent phosphate prohibition	Non-Structural		-			X				-	Varies			X		Multiple
Pollution Prevention	Pet waste information/ outreach	Non-Structural		-		X	X	X			-	\$2,500 to \$10,000 per year			X		Multiple
Pollution Prevention	Pet waste disposal stations	Non-Structural		-		X	X	X			-	\$100 to \$500 per station	X		X		Multiple
Pollution Prevention	Waterfowl congregation area management	Non-Structural		-		X	X	X			-	Varies	X		X		-
Pollution Prevention	Manure management program	Non-Structural		-		X	X	X			-	\$8,186 per acre or 145 animals (\$3.84 per pound of total N removed)	X				c
Pollution Prevention	Livestock exclusion fencing	Non-Structural		-	X	X	X	X			-	\$95 per pound of total P removed	X				c
Pollution Prevention	Retirement of cropland or pasture	Non-Structural		-	X	X	X				-	\$17 per acre (\$1.80 per pound total N removed)	X				c
Pollution Prevention	Wetland Restoration	Non-Structural		-	X	X	X				-	\$108 per acre (\$2.16 per pound total N removed)	X	X		X	c
Pollution Prevention	Sealcoating alternatives	Non-Structural		-					X	X	-	Cost increase over traditional materials: \$1 to 2 per square yard of surface treated.	X		X		
Pollution Prevention	Soil testing and fertilizer selection outreach	Non-Structural		-		X	X				-	\$2,500 to \$10,000 per year	X		X		Multiple

- a- "Stormwater Best Management Practices: Guidance Document". Boston Water and Sewer Commission, 980 Harrison Avenue, Boston, MA 02119. January 2013
- b- "2013 Clean Water Act Section 319 Nonpoint Source Pollution Management Program Annual Report and 2013 Progress Report on the 'Chesapeake Bay and Virginia Waters Cleanup Plan", July 1, 2012 – June 30, 2013, and "Supplement: TMDL Watershed Implementation Progress Summary", February 2014. Commonwealth of Virginia
- c- "Pennsylvania Nonpoint Source BMP Effectiveness, Cost-Effectiveness and Potential for Reducing Loads". Jeff Sweeney, University of Maryland. PA Chesapeake Bay Advisory Committee Meeting. Harrisburg, PA. June 3, 2004
- d- USEPA NPDES Stormwater "Menu of BMPs" Fact Sheets
- e- "Low Impact Best Management Practice (BMP) Information Sheet: Constructed Stormwater Subsurface Gravel Wetland"; Charles River Watershed Association; January 2009